

PATENT SPECIFICATION

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DRAWINGS ATTACHED

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(54) MOP WITH PAD SECURING MEANS

(71) We, BISSELL INC., of Grand Rapids, Michigan, United States of America, a corporation organized and existing under the laws of the State of Michigan, United States of America, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The invention relates to a mop.

In recent years, it has become possible to provide cleaning devices which employ disposable pads instead of reusable pads which required time and effort to clean. With the development of cheaper materials having the necessary capability to absorb or pick up dirt, it has become more desirable to simply remove and throw away the pad rather than clean it.

Paralleling the developments of disposable pads, efforts have been made to simplify the manner of attaching them to the mop head. However, the developments to date have involved rather complicated structures, which were correspondingly expensive to construct and market, and which did not fully satisfy the requirements of easy attachment and removal.

Previous disposable pad mops often unduly restricted the usable working area of the pad, and required multi-layer pads. Furthermore, the means for attaching the pad to the head have often lacked durability.

Also, prior pad clamping devices were undesirably heavy, and could not be used with the extremely lightweight disposable pads available today.

The present invention solves the above problems.

According to the present invention there is provided a mop having a head with an opening therethrough and a plurality of rigid teeth extending inwardly from the

edges of the opening and a mop pad having a myriad of loops on its surface which are held by the teeth and serve to retain the pad on the head.

The drawing shows a preferred embodiment of the invention.

In the drawing:

Fig. 1 is a perspective view of a mop of the invention;

Fig. 2 is a top plan view of the mop head with mop pad attached;

Fig. 3 is a section on line 3-3 of Figure 2; and

Fig. 4 is an enlarged fragmentary elevation of the teeth.

Referring to the drawing, the mop includes a handle 1 and a head 2 which may be connected by any suitable means, such as the pivot member 3. With the arrangement shown, the head 2 can pivot so as to extend generally laterally from the handle 1. Head 2 is shown as generally triangular and is preferably constructed of a lightweight plastics material which is nevertheless rigid when in relatively thin segments, and it is here shown to have a thickness of the order of 1/8 of an inch. Many such plastics are commercially available.

Head 2 has a flat bottom surface 4 which acts as a pad backup surface for a flat pad, and which is usually preferred for most cleaning operations, and a flat upper surface 5 with strengthening ribs therein.

A hole 6 is disposed in head 2 at each corner of the triangle, for securing a disposable pad to the head 2. As shown in the drawing, the area of the surface 4 is substantially greater than the total area of the holes 6.

Holes 6 are shown as generally circular and have pointed teeth 7 spaced about their circumference and extending radially inward. Teeth 7 are preferably of the same material as head 2 and may be integral parts thereof. They are pointed at their

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inner ends and these pointed ends extend upwardly from the plane of head surface 5. The depth of each tooth root is the same as the depth of head 2, but the edges leading to the point are bevelled, thus narrowing the tooth to a relatively small depth at its point. With this construction, each tooth 7 resembles a three dimensional arrowhead with flat sides.

For the cleaning operation, a disposable pad 8 is utilized with head 2. Pad 8 is comprised of a fibrous material whose surface provides a myriad of tiny loops 9 throughout. The pad is shaped to correspond to the shape of head 2, with the coarse upper and lower pad surfaces 10 being flat. Pad 8 shown in the drawing is of uniform composition, of a lofted non-woven material such as Nylon, or such as a combination of Dacron (Dacron is a Registered Trade Mark) and Viscose. A loosely woven material would also be satisfactory. The material used should be lightweight, inexpensive, resilient, flexible and of substantial tensile strength so as to be self supporting when of moderate thicknesses, such as 1/2 inch or the like. The pad 8 can be of varying sizes or shapes and, as shown, can extend outwardly beyond head 2 to provide more cleaning surface area without requiring a larger or heavier pad support structure.

The operator places pad 8 next to the flat bottom head surface 4 so that the pad surface 10 conforms and fits flat against surface 4. The operator may then apply localized pressure, as with his thumb, to the bottom surface 10, so that portions of pad 8 will protrude through the holes 6. As this occurs, the pad will ride up onto the bevelled portions of rigid teeth 7 until some of the pad loops 9 extend over and around the flat upper tooth surfaces. The bottom surface 10 will then temporarily be depressed in the area corresponding to the positions of the holes 6. Since the pad material is resilient, and since the back-up surface 4 covers a large area of the pad 8, the bottom surface 10 will return to a generally flat shape within a short period of time, and will do so particularly during operation when pressure is being applied against the pad 8. As this occurs, the fiber loops over the teeth will be extended above the top surface of the pad. Thus the invention leaves nearly 100% of the bottom surface 10 available for cleaning surface duty.

It is also possible to secure the pad to head 2 by applying general pressure instead of localized pressure. For example, by merely positioning the pad on a floor, and

by pressing the mop head 2 against one of the surfaces 10 and jiggling or reciprocating the mop, the teeth will engage pad 8 sufficiently for operation. Generally, no force will act to disengage the pad 8 during operation. Since teeth 7 extend in numerous directions, any direction of movement of the mop during operation will serve only to force more fiber loops into engagement with the teeth 7. Thus, operation of the mop serves to secure the pad 8 thereto and the operator need not worry about constantly retrieving his cleaning pad.

Pad 8 is easily removed from head 2 by either pushing downwardly with the fingers through holes 6 to disengage the fiber loops 9, or by placing the foot on the extended portion of pad 8 and pulling up on mop handle 1. The fiber loops 9 are flexible enough to be disengaged by moderate pressure applied in the above manner.

When one surface of pad 8 is dirty, the pad may be reversed on head 2 to expose the clean surface. Also, easy removal and the low expense of replacement allow the operator to remove and dispose of a used pad, and easily substitute another.

The invention provides a light, cheaply constructed mop, with a disposable, single unit cleaning pad which is efficient, lightweight, easily attached or removed and adaptable to many cleaning operations.

WHAT WE CLAIM IS:—

1. A mop having a head with an opening therethrough and a plurality of rigid teeth extending inwardly from the edges of the opening and a mop pad having a myriad of loops on its surface which are held by the teeth and serve to retain the pad on the head.

2. A mop according to claim 1 in which the teeth extend away from the pad in the direction away from the edges of the opening.

3. A mop according to claim 1 or 2 which has more than one of the said openings, the area of the surface of the head facing the pad being substantially greater than the total area of the openings.

4. A mop according to any preceding claim in which the head is generally triangular and there are three of the said openings one adjacent each corner thereof.

5. A mop substantially as described herein with reference to the accompanying drawings.

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